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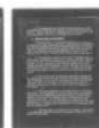
ARMY AVIATION TEST BOARD FORT RUCKER ALA
CHECK TEST OF THE AERIAL WIRE DISPENSER, AN/ATE-1().(U)
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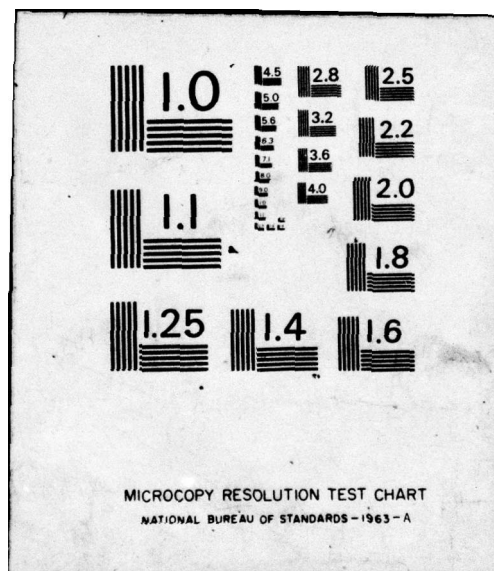


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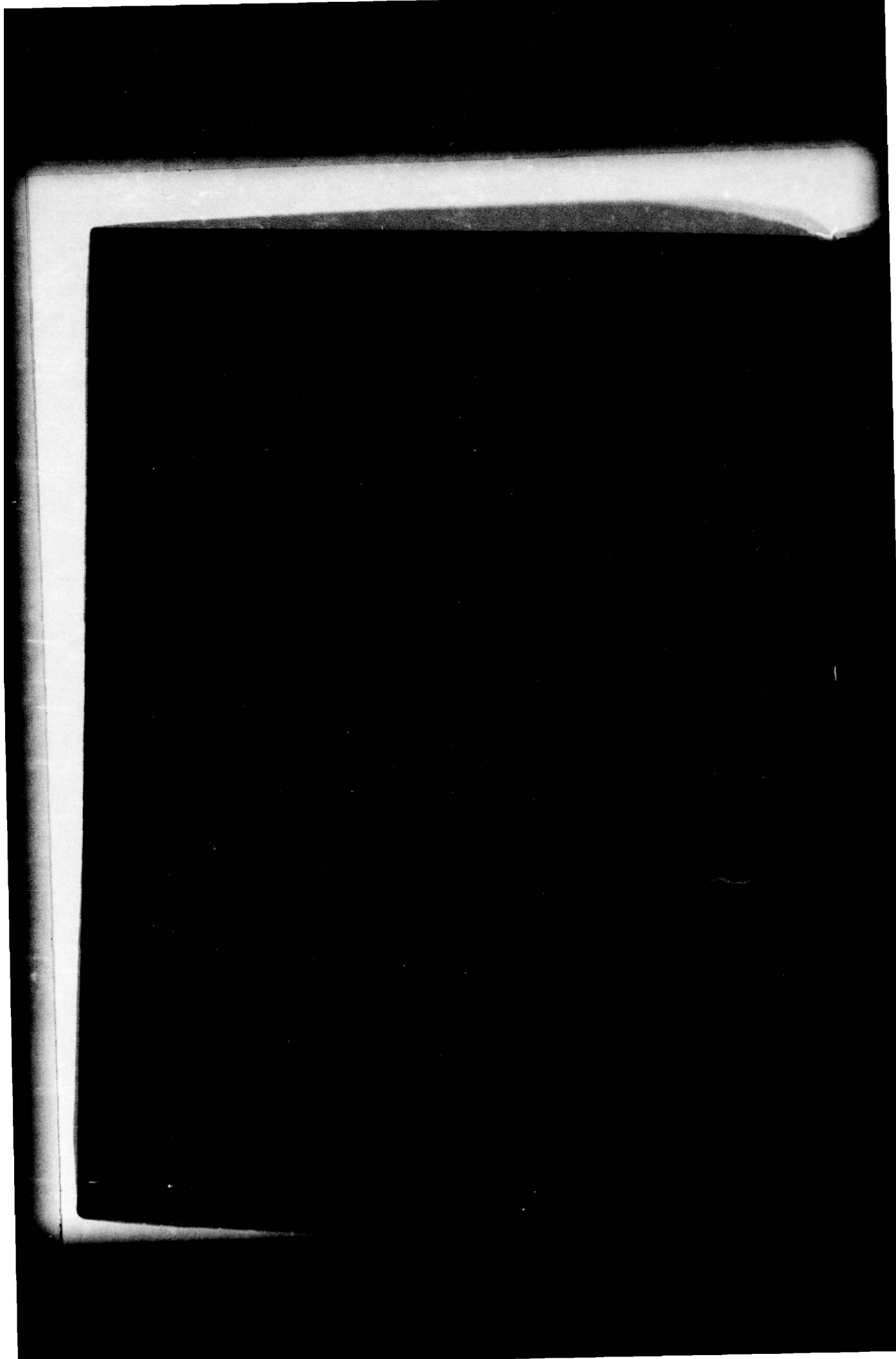
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UNITED STATES ARMY AVIATION BOARD
Fort Rucker, Alabama

REPORT OF TEST

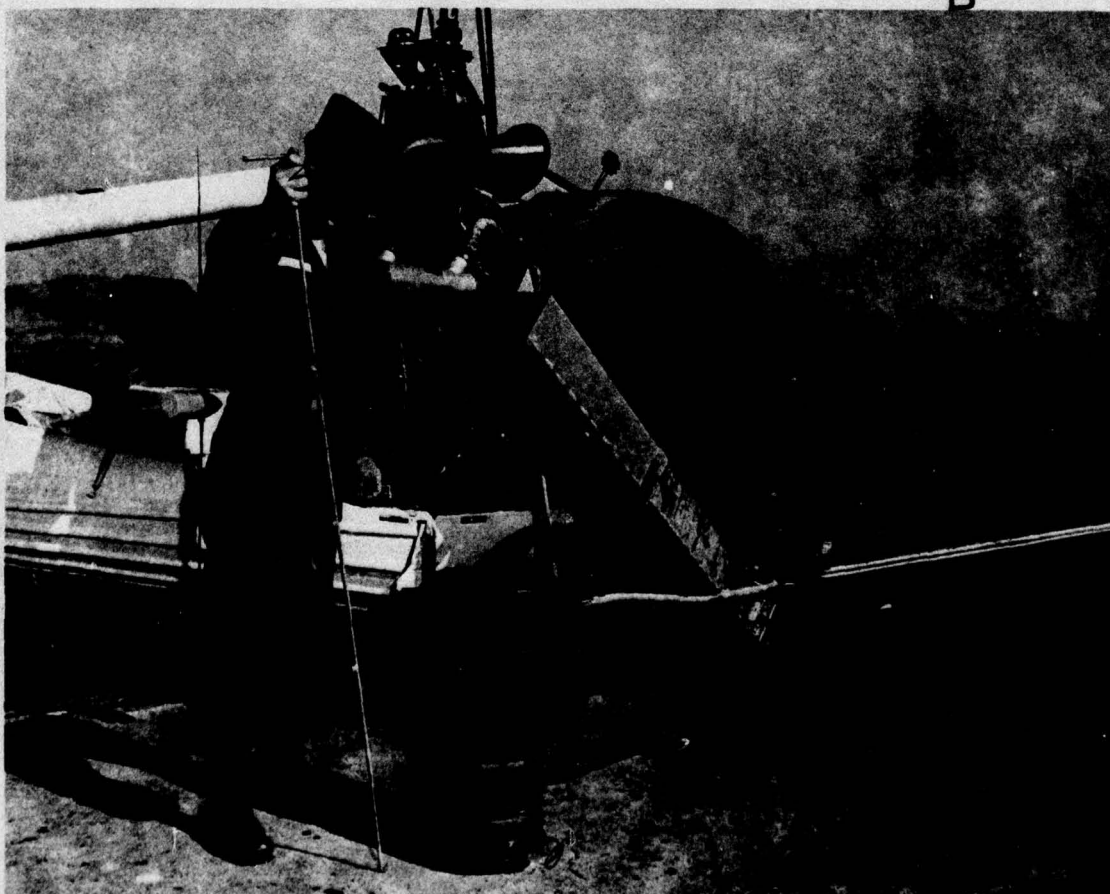
USATECOM PROJECT NO. 4G-3355-03

⑥ CHECK TEST OF THE AERIAL WIRE DISPENSER, AN/ATE-1()

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UNITED STATES ARMY AVIATION BOARD
Fort Rucker, Alabama

REPORT OF TEST

USATECOM PROJECT NO. 4G-3355-03

CHECK TEST OF THE AERIAL WIRE DISPENSER, AN/ATE-1()

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UNITED STATES ARMY AVIATION BOARD
Fort Rucker, Alabama

REPORT OF TEST

USATECOM PROJECT NO. 4G-3355-03

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A

CHECK TEST OF THE AERIAL WIRE DISPENSER, AN/ATE-1()

PART I - GENERAL

A. REFERENCES. A list of references is contained in part III.

B. AUTHORITY.

1. Directive. Letter, AMSTE-TA, US Army Test and Evaluation Command, 31 December 1962, "USATECOM Materiel Test Program," with three inclosures.

2. Purpose. To conduct a check test of the AN/ATE-1() Aerial Wire Dispenser to determine whether previously reported deficiencies and shortcomings have been corrected and whether the modified dispenser is suitable for Army use in temperate climates.

C. BACKGROUND.

1. The AN/ATE-1() is a modified AN/ATE-1 dispenser. The AN/ATE-1 was check tested by the United States Army Aviation Board in 1961, under Projects No. AVN 2959/61 and 2959/62(D), (references 3 and 4, part III). The United States Army Arctic Test Board completed service testing in 1962 under Project ATB 4-52. The primary modifications are in the attaching hardware to permit installation on the OH-23D Helicopter.

2. On 18 May 1962, the Chief Signal Officer requested the Commanding General, USCONARC, to conduct a check test of the AN/ATE-1(), (reference 6, part III).

3. First Indorsement (reference 6, part III) requested the Chief Signal Officer to furnish the Aviation Board an AN/ATE-1() for testing.

4. The equipment was received for test 26 September 1962. A maintenance package was not received. An instruction handbook was received. Twenty containers of repackaged wire were furnished by the US Army Airborne, Electronic, and Special Warfare Board.

D. DESCRIPTION OF MATERIEL.

1. The AN/ATE-1() Aerial Wire Dispenser Set consists of a combination of basic components which, when the parts are assembled into different configurations, furnish suitable equipment for air-laying field wire contained in MX-306A/G dispensers from various Army aircraft. This equipment may be used with the U-6 airplane, OH-13, OH-23D, UH-19, CH-21, CH-34, CH-37, and the UH-1() Helicopters.

2. The equipment consists of two metal, rectangular ducts or chutes that are sufficiently large in size to hold two 1/2-mile containers of Field Wire WD-1/TT (MX-306A/G dispensers) placed one on top of the other. A rear opening is provided near the bottom of the chute through which the wire is dispensed. For use with other than the OH-13 and OH-23D helicopters and the U-6 airplane, two chutes are mounted on a plate with supports to hold the chutes at the proper angle for wire payout.

3. The double-chute mounting plate (MK-480) is designed to fit, and dispense the wire through, the floor observation window of the UH-19 helicopter. In all other aircraft except the OH-13 and OH-23D helicopters and the U-6 airplane, the double plate is fastened to a mounting bracket which projects as a balcony out of the cargo door of the aircraft.

4. When this equipment is used with the OH-13 or OH-23D helicopters, chute extensions are used and either one or two extended chutes may be used depending on the amount of wire required for the mission. If two chutes are required they are mounted one on either side of the helicopter. The mounting plate is not required in this installation, but a special gimbal mounting device (MK-479) is furnished for each chute. A loading rod is furnished for use in lowering the coils into the extended chute.

5. Only one chute is used with the U-6 airplane. It is mounted on a single plate (MK-478) and projects through the camera port in the bottom of the aircraft.

6. The bottom of each chute is equipped with jettison release doors which can be activated for dropping all of the wire that remains in the chute in event of emergency or at the end of the wire-laying mission. The jettison doors are controlled mechanically by a release arm or electrically by a toggle switch which is mounted on a control box located near the top of each chute. The switch operation closes the circuit from a penlight battery (BA-58) and electrically detonates a squib (dynamite cap) in the jettison release mechanism. Downward pressure on the release arm during detonation of the squib mechanically operates the jettison release mechanism latch, thus releasing the jettison doors. The mechanical release does not require the use of the squib. In the OH-13 or OH-23D helicopters the release control circuit is extended by a cable from the control boxes to a two-position switch which is clamped to the helicopter cyclic stick and is operated by the aviator.

E. TEST OBJECTIVES. The test objectives are outlined in paragraph B2.

F. FINDINGS.

1. The AN/ATE-1() was fitted to the OH-13, UH-19, CH-21, OH-23, CH-34, CH-37, U-6, and UH-1. During this test, the dispenser-attaching hardware fit satisfactorily except on the OH-13. The OH-13 deficiency was corrected during the test by the addition of an attaching bracket between the dispenser and the helicopter frame.

2. The AN/ATE-1() was flight checked on the OH-23D. During this test, 16 miles of wire were air laid without malfunction.

3. No modifications were required to any of the aircraft involved in this test.

4. A list of shortcomings previously reported by the Aviation Board and their status is included in part II. No deficiencies were reported.

G. CONCLUSIONS.

1. The shortcomings previously reported were satisfactorily corrected for temperate climates.

2. The AN/ATE-1() Aerial Wire Dispenser is suitable for Army use in temperate climates.

H. RECOMMENDATION. It is recommended that the AN/ATE-1() be type classified Standard A for temperate conditions after the deficiency listed in paragraph B, part II, is corrected.

Quarrell Evans Cady
A. J. RANKIN
Colonel, Armor
President

8. 2. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 8

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PART II - TEST DATA

A. Summary of Missions Flown. On all flights, pay-out of wire from dispensers, continuity of circuit, and condition of wire were satisfactory except where indicated.

| <u>Flight No.</u> | <u>Acft</u> | <u>Number of</u> <u>MX-306A/G Dispensers with:</u> | | <u>Remarks</u> |
|-------------------|-------------|---|------------------------|--|
| | | <u>New Wire</u> | <u>Repackaged Wire</u> | |
| 1 | OH-23D | | 3 | |
| 2 | OH-23D | | 4 | No. 3 dispenser jettisoned prematurely. Wire did not break. No. 4 dispenser operated satisfactorily. |
| 3 | OH-23D | | 4 | One splice failed because of improper splicing between No. 1 and No. 2 dispensers. |
| 4 | OH-23D | 4 | | |
| 5 | OH-23D | 4 | | |
| 6 | OH-23D | 4 | | |
| 7 | OH-23D | 2 | | |
| 8 | OH-23D | | 4 | |
| 9 | OH-23D | 5 | | |

B. Deficiencies and Shortcomings.

1. Deficiencies and Shortcomings Previously Reported. Listed below are shortcomings noted in reports of test of Projects No. AVN 2959/61 and AVN 2959/62(D) and an indication of their status in this test item. No deficiencies were reported.

| <u>Shortcoming</u> | <u>Findings This Test</u> |
|--|--|
| a. The MK-481 mounting bracket could not be securely attached to the CH-21 floor by use of the tie-down rings. | Bracket was found to fit satisfactorily with the use of maneuverable crossbars and bolts with nuts provided. |
| b. Instructions for payout flange tension adjustment were not sufficiently detailed. | Instructions were satisfactory. |
| c. No provision was made for securing scales to payout flange when measuring tension. | An eyelet has been provided in the jettisoning doors for this purpose and is satisfactory. |

2. Deficiencies and Shortcomings Noted During This Test. The following deficiency was found during this test. No shortcomings were noted.

| <u>Deficiency</u> | <u>Suggested Corrective Action</u> | <u>Remark</u> |
|---|--|---|
| Attaching hardware for OH-13 installation does not fit. | Provide proper hardware. | This condition was corrected during the test by addition of a support from the chute to the frame (see photograph, page 8). A similar modification to production sets will correct this deficiency. |



Arrow points to the support from the chute to the frame which was added during the test because the attaching hardware did not fit the OH-13.

APPENDICES

Part III

1. Report of Test, Project Number AVN 1955-1, "Descent Test of the Aerial Field Disperser," US Army Aviation Board, 1955.

2. Report of Test, Project Number AVN 1955-1, "Descent Test of the Aerial Field Disperser," US Army Aviation Board, 1955.

3. Report of Test, Project Number AVN 1955-1, "Descent Test of the Aerial Field Disperser," US Army Aviation Board, 1955.

PART III

4. Report of Test, Project Number AVN 1955-1, "Descent Test of the Aerial Field Disperser," US Army Aviation Board, 1955.

APPENDICES

5. Report of Test, Project Number AVN 1955-1, "Descent Test of the Aerial Field Disperser," US Army Aviation Board, 1955.

6. Report of Test, Project Number AVN 1955-1, "Descent Test of the Aerial Field Disperser," US Army Aviation Board, 1955.

PART III - APPENDICES

List of References

1. Plan of Test, Project Number AVN 2959, "Service Test of the M-8C Aerial Field Wire Dispenser," US Army Aviation Board, 15 September 1959.
2. Report of Test, Project Number AVN 2959, "Service Test of the M-8C Aerial Field Wire Dispenser," US Army Aviation Board, 9 February 1960.
3. Report of Test, Project Number AVN 2959/61, "Check Test of the Aerial Field Dispenser Sets, AN/ATE-1, -2, and -3, (Formerly M-8C Aerial Field Wire Dispenser)," US Army Aviation Board, 29 May 1961.
4. Report of Test, Project Number AVN 2959/62(D), "Desert Test of the AN/ATE () Aerial Field Wire Dispenser Set," US Army Aviation Board, 26 September 1961.
5. Report of Service Test of Project Number ATB452, "Dispenser Set, Wire, Aircraft AN/ATE-1()," US Army Arctic Test Board, 9 June 1962.
6. Letter, Office of the Chief Signal Officer, SIGRD-86, 18 May 1962, subject: "Aerial Field Wire Dispenser AN/ATE-1, with 1st Indorsement, USCONARC, 3 July 1962.

AD _____ Accession No. _____
United States Army Aviation Board, Fort Rucker, Alabama
Check Test of the Aerial Wire Dispenser, AN/ATE-1()
USATECOM Project No. 4G-3355-03, dated _____
14 pp., 2 illus., unclassified report
Check test was conducted to determine whether previously
reported deficiencies and shortcomings had been corrected
and whether the modified dispenser is suitable for Army
use in temperate climates. It was found that the
deficiencies and shortcomings had been corrected and that
the item was suitable for use in temperate climates. Type
classification as Standard A was recommended.

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